

Title (en)
POSITIVE ELECTRODE ACTIVE MATERIAL CONTAINING SPINEL COMPOSITE SOLID SOLUTION OXIDE, METHOD FOR MANUFACTURING SAME, AND LITHIUM SECONDARY BATTERY INCLUDING SAME

Title (de)
POSITIVELEKTRODENAKTIVMATERIAL MIT SPINELLMISCHFESTLÖSUNGSOXID, VERFAHREN ZUR HERSTELLUNG DAVON UND LITHIUMSEKUNDÄRBATTERIE DAMIT

Title (fr)
MATÉRIAU ACTIF D'ÉLECTRODE POSITIVE CONTENANT UN OXYDE DE SOLUTION SOLIDE COMPOSITE DE SPINELLE, SON PROCÉDÉ DE FABRICATION ET BATTERIE SECONDAIRE AU LITHIUM LE COMPRENANT

Publication
EP 4141994 A1 20230301 (EN)

Application
EP 21792110 A 20210316

Priority
• KR 20200048013 A 20200421
• KR 2021003263 W 20210316

Abstract (en)
The present invention relates to a positive electrode active material containing a spinel composite solid solution oxide, a method for manufacturing same, and a lithium secondary battery including the same. The spinel composite solid solution oxide contains cubic ($P4_{32}$) and face-centered cubic ($Fd-3m$) in an optimized solid solution ratio in the crystal, and a low content of lithium nickel oxide ($Li_{1-x}Ni_xO$) is combined. A positive electrode active material containing the spinel composite solid solution oxide provides excellent output characteristics while having stable cycle-life characteristics according to the type and content of doping elements replacing transition metals, the synthesis temperature, and the amount of impurities generated.

IPC 8 full level
H01M 4/525 (2010.01); **C01G 53/00** (2006.01); **H01M 4/36** (2006.01); **H01M 4/505** (2010.01); **H01M 10/052** (2010.01)

CPC (source: EP KR US)
C01G 53/54 (2013.01 - EP KR US); **H01M 4/131** (2013.01 - US); **H01M 4/364** (2013.01 - KR); **H01M 4/505** (2013.01 - KR US); **H01M 4/525** (2013.01 - EP KR US); **H01M 10/052** (2013.01 - EP KR US); **C01P 2002/32** (2013.01 - US); **C01P 2002/54** (2013.01 - US); **C01P 2002/72** (2013.01 - US); **C01P 2002/76** (2013.01 - EP US); **C01P 2002/77** (2013.01 - EP KR US); **C01P 2004/50** (2013.01 - EP); **C01P 2004/61** (2013.01 - EP); **C01P 2004/62** (2013.01 - EP); **C01P 2006/11** (2013.01 - EP KR US); **C01P 2006/12** (2013.01 - EP KR US); **C01P 2006/40** (2013.01 - US); **H01M 2004/028** (2013.01 - EP); **Y02E 60/10** (2013.01 - EP)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
EP 4141994 A1 20230301; **EP 4141994 A4 20240619**; CN 115917792 A 20230404; JP 2023523209 A 20230602; KR 102168640 B1 20201021; US 2023238524 A1 20230727; WO 2021215670 A1 20211028

DOCDB simple family (application)
EP 21792110 A 20210316; CN 202180043831 A 20210316; JP 2022563482 A 20210316; KR 20200048013 A 20200421; KR 2021003263 W 20210316; US 202117920459 A 20210316